Clinical Nutrition xxx (2016) 1–10

Contents lists available at ScienceDirect

Clinical Nutrition

journal homepage: http://www.elsevier.com/locate/clnu

Review

Hospital malnutrition in Latin America: A systematic review

Maria Isabel T.D. Correia [a, *], Mario Ignacio Perman [b], Dan Linetzky Waitzberg [c]

[a] Department of Surgery, Universidade Federal de Minas Gerais Medical School, Belo Horizonte, Brazil
[b] Critical Care Unit, Department of Medicine, Italian Hospital of Buenos Aires, Argentina
[c] Department of Gastroenterology, LIM 35, University of São Paulo Medical School, São Paulo, Brazil

ARTICLE INFO

Article history:
Received 31 March 2016
Accepted 27 June 2016

Keywords:
Malnutrition
Hospital
Assessment
Screening
Prevalence
Cost

SUMMARY

Background: Disease-related malnutrition is a major public health issue in both industrialised and emerging countries. The reported prevalence in hospitalised adults ranges from 20% to 50%. Initial reports from emerging countries suggested a higher prevalence compared with other regions, with limited data on outcomes and costs.

Methods: We performed a systematic literature search for articles on disease-related malnutrition in Latin American countries published between January 1995 and September 2014. Studies reporting data on the prevalence, clinical outcomes, or economic costs of malnutrition in an adult (≥18 years) inpatient population with a sample size of ≥30 subjects were eligible for inclusion. Methodological quality of the studies was assessed by two independent reviewers using published criteria.

Results: We identified 1467 citations; of these, 66 studies including 29 ,474 patients in 12 Latin American countries met the criteria for inclusion. There was considerable variability in methodology and in the reported prevalence of disease-related malnutrition; however, prevalence was consistently in the range of 40%–60% at the time of admission, with several studies reporting an increase in prevalence with increasing duration of hospitalisation. Disease-related malnutrition was associated with an increase in infectious and non-infectious clinical complications, length of hospital stay, and costs.

Conclusion: Disease-related malnutrition is a highly prevalent condition that imposes a substantial health and economic burden on the countries of Latin America. Further research is necessary to characterise screening/assessment practices and identify evidence-based solutions to this persistent and costly public health issue.

1. Introduction

Disease-related malnutrition in hospitalised patients is a major public health issue in both industrialised and emerging countries around the world. Poor nutritional status is associated with increased morbidity and mortality, increased length of hospitalisation, more frequent re-admission, and increased healthcare costs [1–12]. However, despite the substantial health and economic burden, disease-related malnutrition remains a highly prevalent and frequently under-recognised and under-treated condition [5,13–16].

Malnutrition in the hospital setting can develop as a consequence of insufficient nutrient intake, impaired absorption or loss of nutrients due to illness or trauma, or increased metabolic demands during illness [17]. The definition of malnutrition remains a subject of debate, with various professional societies proposing different criteria—possibly explaining some of the variability in prevalence rates reported in the literature [18–20]. Generally, unintentional weight loss >5% in a short period of time and decreased food intake are associated with a deterioration in nutritional status.

The prevalence of disease-related malnutrition has been reported to be between 20% and 50%, although data vary considerably due to differences in study populations, ascertainment methods, and hospital setting [3]. The largest body of epidemiological evidence comes from Europe, where several large studies have reported prevalence figures in the range of 20%–30% [10,21–25], with a higher prevalence observed in the older adults (32%–58%) [2,26,27] and patients with malignant disease (31%–39%) [6,28,29]. Studies conducted in Asia have reported prevalence figures between 27% and 39% [8,14,15], with a higher prevalence in the older adults (88%) [30], the critically ill (87%) [31], surgical patients (56%)

* Corresponding author. Universidade Federal de Minas Gerais Medical School, Av. Carandaí 246 apt. 902, Belo Horizonte, 30130-060, Brazil.
E-mail address: isabel_correia@uol.com.br (M.I.T.D. Correia).

http://dx.doi.org/10.1016/j.clnu.2016.06.025

[32], and patients with gastrointestinal malignancies (48%) [33]. Prevalence data from studies conducted in North America and Australia range from 37% to 45% [34,35] and 23%–42% [5,36–39], respectively.

The Latin America region includes 20 countries with a geographic area of more than 19 million square kilometres and a population of 626 million. The estimated combined gross domestic product for the countries in Latin America is US$5.6 trillion. Healthcare delivery ranges from private to public funded universal healthcare, with a mix of semi-public and private healthcare in several countries. A 2001 multinational survey conducted in 13 countries in Latin America reported that malnutrition was present in 50.2% of the 9348 hospitalised adults included in the survey [40]. Despite the high prevalence, fewer than 9% of patients received parenteral or enteral nutrition, and only two of the 13 countries had national policies regarding best practices for nutrition therapy in hospitals or long-term care facilities. In the 15 years since this seminal survey, several studies have evaluated the prevalence and clinical consequences of disease-related malnutrition in different hospital settings throughout Latin America. Therefore, the aim of the present systematic literature review was to identify and summarise the available evidence regarding the prevalence, clinical consequences, and costs associated with disease-related malnutrition in Latin America.

2. Methods

2.1. Search strategy and selection criteria

The systematic literature review was performed according to the guidelines of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) group [41]. We searched Medline, Embase, the Cochrane Database of Systematic Reviews, the Database of Abstracts of Reviews of Effects (DARE), the Cochrane Central Register of Controlled Trials (CENTER), EconLit, and the Latin American and Caribbean Centre on Health Sciences Information (LILACS) for articles on disease-related malnutrition in Latin American countries published in English, Spanish, or Portuguese between January 1995 and September 2014. The search terms encompassed three categories: disease, geographic region, and outcomes (the search protocol is available in the supplementary material). Studies reporting data on the prevalence, clinical outcomes, or economic costs of disease-related malnutrition in an adult (≥18 years) inpatient population with a sample size of at least 30 subjects were eligible for inclusion. We excluded editorials, narrative reviews, abstracts without full text articles, and studies that lacked sufficient information regarding the study population or analytic methods. Article titles and abstracts generated by the search were screened by two independent reviewers to identify relevant articles. Disagreement between reviewers was resolved by consensus through direct discussion. Information on study design, patient population, and prespecified outcomes was extracted and recorded on data extraction forms.

2.2. Quality assessment

The methodological quality of the studies was assessed by two independent reviewers using the Prevalence Critical Appraisal tool [42], a 10-item checklist designed to assess the internal validity of prevalence data (see supplementary material). Studies reporting economic outcomes were also appraised for methodological quality using an adapted version of the Drummond 10-point checklist (see supplementary material) [43]. Disagreement between reviewers regarding the methodological quality of the retrieved studies was resolved by consensus.

2.3. Data synthesis

Study results for all publications that met the criteria for inclusion are summarised descriptively according to patient population and outcome measurement. Prevalence data based on the Subjective Global Assessment (SGA) tool are reported as the combined proportion of patients with moderate and severe malnutrition (categories B and C, respectively); data based on the Malnutrition Universal Screening Tool (MUST) are reported as the combined proportion of patients with medium risk and high risk of malnutrition; and data based on the Mini Nutritional Assessment (MNA) are reported as the combined proportion of patients who are malnourished and at risk of malnutrition. Prevalence data based on the Nutritional Risk Screening 2002 (NRS 2002) screening instrument are reported as the proportion of patients with a combined score for nutritional risk and disease severity corresponding with a high risk of malnutrition (combined score ≥3).

3. Results

We identified 1467 citations, 85 of which were judged to be potentially eligible (Fig. 1). Manual review of references identified an additional two studies. Of the 87 published articles formally assessed for eligibility, 66 met the criteria for inclusion [40,44–108]. One multinational study reported data from 13 Latin

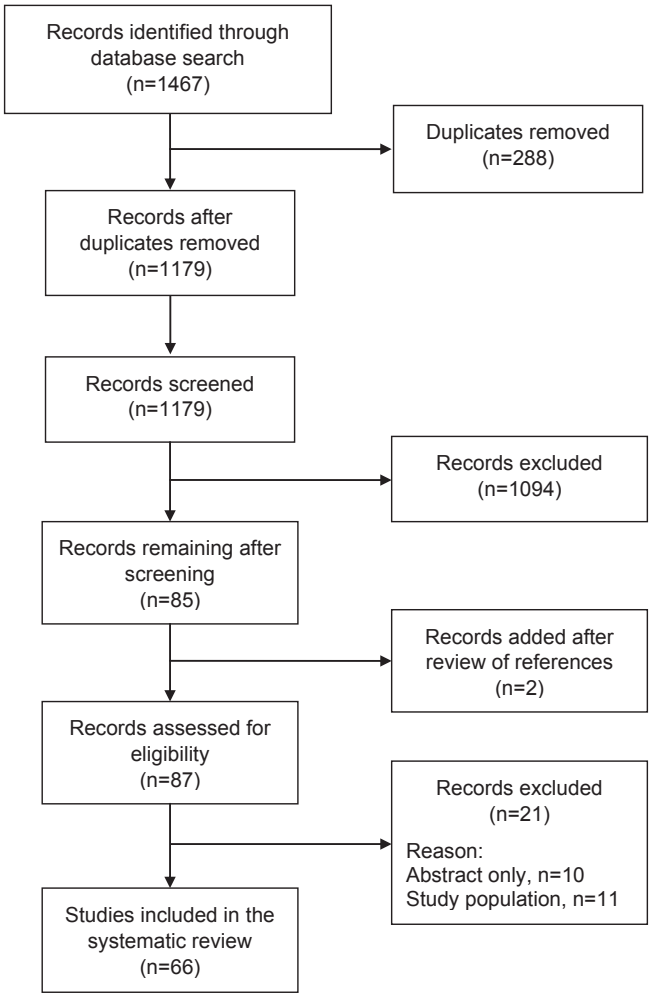

Fig. 1. Study flow diagram.

Please cite this article in press as: Correia MITD, et al., Hospital malnutrition in Latin America: A systematic review, Clinical Nutrition (2016), http://dx.doi.org/10.1016/j.clnu.2016.06.025